STIC-Biotech/ChemLib 10/40 86

From: Landsman, Robert
Sent: Tuesday, September 16, 2003 6:45 PM
To: STIC-Biotech/ChemLib
Subject: 09/841,720

all databases (interference on separate disk):

SEQ ID NO:1

at least 25 contiguous bases of SEQ ID NO:1

SEQ ID NO:2

thanks
Robert Landsman, Ph.D
Patent Examiner
CM1, 9D11, AU 1647
703-306-3407
U.S. Patent and Trademark Office
robert.landsman@uspto.gov

Searcher:_____
Phone:_____
Location:_____
Date Picked Up:_____
Date Completed:_____
Searcher Prep/Review:_____
Clerical:_____
Online time:_____

TYPE OF SEARCH:
NA Sequences:_____
AA Sequences:_____
Structures:_____
Bibliographic:_____
Litigation:_____
Full text:_____
Patent Family:_____
Other:_____

VENDOR/COST (where applic.)
STN:_____
DIALOG:_____
Questel/Orbit:_____
DRLink:_____
Lexis/Nexis:_____
Sequence Sys.:_____
WWW/Internet:_____
Other (specify):_____

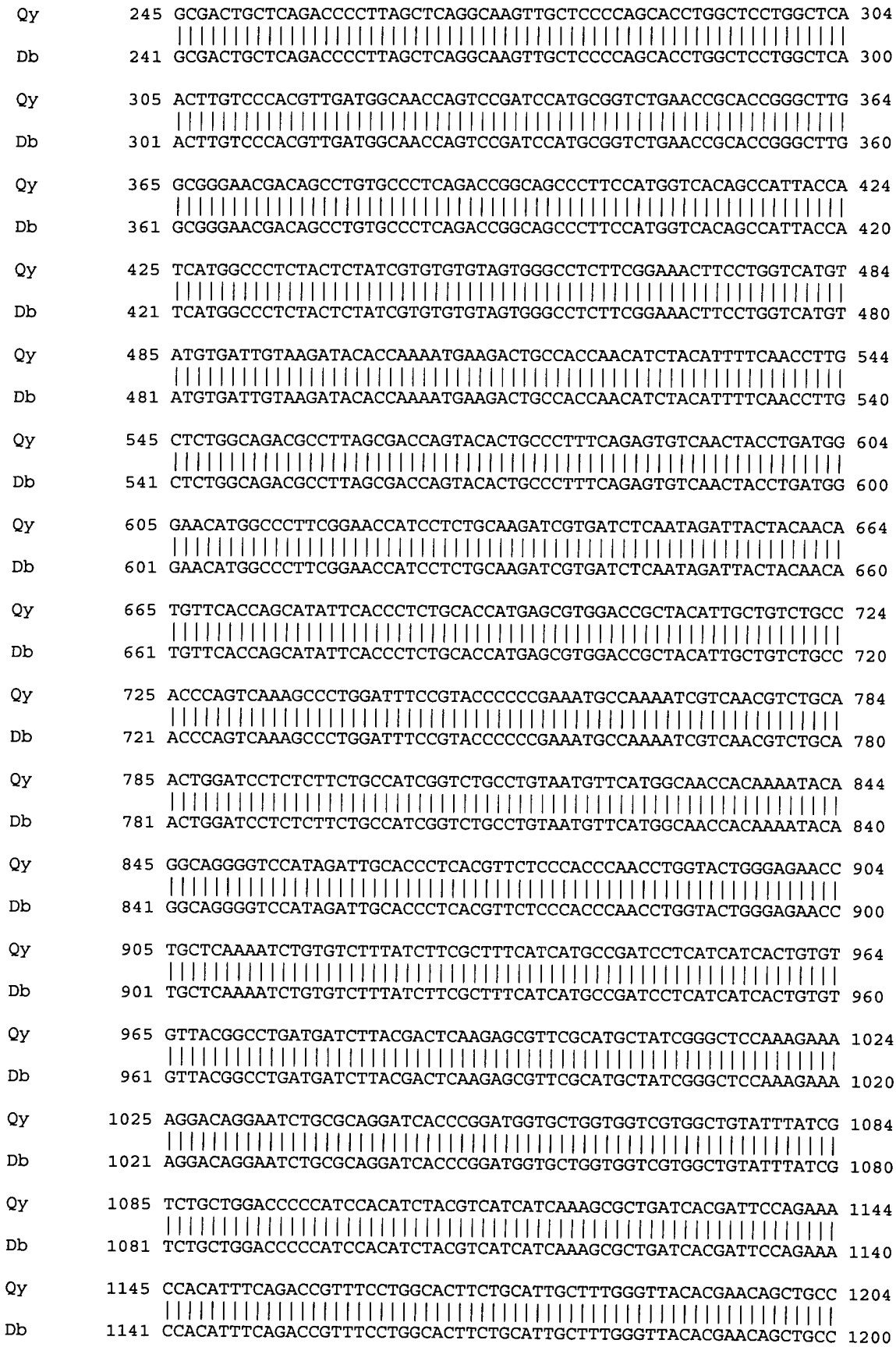
Sequence Comparison A

SEQ ID NO:1

```
LOCUS       RATMORA                 1586 bp    mRNA    linear   ROD 04-AUG-1993
DEFINITION  Rattus norvegicus mu opioid receptor mRNA, complete cds.
ACCESSION   L13069
VERSION     L13069.1  GI:348250
KEYWORDS    mu opioid receptor.
SOURCE      Rattus norvegicus (Norway rat)
  ORGANISM  Rattus norvegicus
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
            Rattus.
REFERENCE   1  (bases 1 to 1586)
  AUTHORS   Chen,Y., Mestek,A., Liu,J., Hurley,J.A. and Yu,L.
  TITLE     Molecular cloning and functional expression of a mu-opioid receptor
            from rat brain
  JOURNAL   Mol. Pharmacol. 44 (1), 8-12 (1993)
  MEDLINE   93341493
   PUBMED   8393525
COMMENT     Original source text: Rattus norvegicus Whole brain cDNA to mRNA.
FEATURES             Location/Qualifiers
     source          1. .1586
                     /organism="Rattus norvegicus"
                     /mol_type="mRNA"
                     /db_xref="taxon:10116"
                     /tissue_type="Whole brain"
     CDS             210. .1406
                     /codon_start=1
                     /evidence=experimental
                     /label=RATMOR1
                     /product="mu opioid receptor"
                     /protein_id="AAA41630.1"
                     /db_xref="GI:348251"
                     /translation="MDSSTGPGNTSDCSDPLAQASCSPAPGSWLNLSHVDGNQSDPCG
                     LNRTGLGGNDSLCPQTGSPSMVTAITIMALYSIVCVVGLFGNFLVMYVIVRYTKMKTA
                     TNIYIFNLALADALATSTLPFQSVNYLMGTWPFGTILCKIVISIDYYNMFTSIFTLCT
                     MSVDRYIAVCHPVKALDFRTPRNAKIVNVCNWILSSAIGLPVMFMATTKYRQGSIDCT
                     LTFSHPTWYWENLLKICVFIFAFIMPILIITVCYGLMILRLKSVRMLSGSKEKDRNLR
                     RITRMVLVVVAVFIVCWTPIHIYVIIKALITIPETTFQTVSWHFCIALGYTNSCLNPV
                     LYAFLDENFKRCFREFCIPTSSTIEQQNSTRVRQNTREHPSTANTVDRTNHQLENLEA
                     ETAPLP"
BASE COUNT      376 a    479 c    361 g    370 t
ORIGIN
```

Query Match 98.0%; Score 1586; DB 10; Length 1586;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1586; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          5 GAAGGGGGCTACAAGCAGAGGAGAATATCAGACGCTCAGACGTTCCCTTCTGCCTGCCGC 64
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GAAGGGGGCTACAAGCAGAGGAGAATATCAGACGCTCAGACGTTCCCTTCTGCCTGCCGC 60

Qy         65 TCTTCTCTGGTTCCACTAGGGCTGGTCCATGTAAGAATCTGACGGAGCCTAGGGCAGCTG 124
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 TCTTCTCTGGTTCCACTAGGGCTGGTCCATGTAAGAATCTGACGGAGCCTAGGGCAGCTG 120

Qy        125 TGAGAGGAAGAGGCTGGGGCGCGTGGAACCCGAAAAGTCTGAGTGCTCTCAGTTACAGCC 184
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TGAGAGGAAGAGGCTGGGGCGCGTGGAACCCGAAAAGTCTGAGTGCTCTCAGTTACAGCC 180

Qy        185 TACCTAGTCCGCAGCAGGCCTTCAGCACCATGGACAGCAGCACCGGCCCAGGGAACACCA 244
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TACCTAGTCCGCAGCAGGCCTTCAGCACCATGGACAGCAGCACCGGCCCAGGGAACACCA 240
```


Qy 245 GCGACTGCTCAGACCCCTTAGCTCAGGCAAGTTGCTCCCCAGCACCTGGCTCCTGGCTCA 304
Db 241 GCGACTGCTCAGACCCCTTAGCTCAGGCAAGTTGCTCCCCAGCACCTGGCTCCTGGCTCA 300
Qy 305 ACTTGTCCCACGTTGATGGCAACCAGTCCGATCCATGCGGTCTGAACCGCACCGGGCTTG 364
Db 301 ACTTGTCCCACGTTGATGGCAACCAGTCCGATCCATGCGGTCTGAACCGCACCGGGCTTG 360
Qy 365 GCGGGAACGACAGCCTGTGCCCTCAGACCGGCAGCCCTTCCATGGTCACAGCCATTACCA 424
Db 361 GCGGGAACGACAGCCTGTGCCCTCAGACCGGCAGCCCTTCCATGGTCACAGCCATTACCA 420
Qy 425 TCATGGCCCTCTACTCTATCGTGTGTGTAGTGGGCCTCTTCGGAAACTTCCTGGTCATGT 484
Db 421 TCATGGCCCTCTACTCTATCGTGTGTGTAGTGGGCCTCTTCGGAAACTTCCTGGTCATGT 480
Qy 485 ATGTGATTGTAAGATACACCAAAATGAAGACTGCCACCAACATCTACATTTTCAACCTTG 544
Db 481 ATGTGATTGTAAGATACACCAAAATGAAGACTGCCACCAACATCTACATTTTCAACCTTG 540
Qy 545 CTCTGGCAGACGCCTTAGCGACCAGTACACTGCCCTTTCAGAGTGTCAACTACCTGATGG 604
Db 541 CTCTGGCAGACGCCTTAGCGACCAGTACACTGCCCTTTCAGAGTGTCAACTACCTGATGG 600
Qy 605 GAACATGGCCCTTCGGAACCATCCTCTGCAAGATCGTGATCTCAATAGATTACTACAACA 664
Db 601 GAACATGGCCCTTCGGAACCATCCTCTGCAAGATCGTGATCTCAATAGATTACTACAACA 660
Qy 665 TGTTCACCAGCATATTCACCCTCTGCACCATGAGCGTGGACCGCTACATTGCTGTCTGCC 724
Db 661 TGTTCACCAGCATATTCACCCTCTGCACCATGAGCGTGGACCGCTACATTGCTGTCTGCC 720
Qy 725 ACCCAGTCAAAGCCCTGGATTTCCGTACCCCCCGAAATGCCAAAATCGTCAACGTCTGCA 784
Db 721 ACCCAGTCAAAGCCCTGGATTTCCGTACCCCCCGAAATGCCAAAATCGTCAACGTCTGCA 780
Qy 785 ACTGGATCCTCTCTTCTGCCATCGGTCTGCCTGTAATGTTCATGGCAACCACAAAATACA 844
Db 781 ACTGGATCCTCTCTTCTGCCATCGGTCTGCCTGTAATGTTCATGGCAACCACAAAATACA 840
Qy 845 GGCAGGGGTCCATAGATTGCACCCTCACGTTCTCCCACCCAACCTGGTACTGGGAGAACC 904
Db 841 GGCAGGGGTCCATAGATTGCACCCTCACGTTCTCCCACCCAACCTGGTACTGGGAGAACC 900
Qy 905 TGCTCAAAATCTGTGTCTTTATCTTCGCTTTCATCATGCCGATCCTCATCATCACTGTGT 964
Db 901 TGCTCAAAATCTGTGTCTTTATCTTCGCTTTCATCATGCCGATCCTCATCATCACTGTGT 960
Qy 965 GTTACGGCCTGATGATCTTACGACTCAAGAGCGTTCGCATGCTATCGGGCTCCAAAGAAA 1024
Db 961 GTTACGGCCTGATGATCTTACGACTCAAGAGCGTTCGCATGCTATCGGGCTCCAAAGAAA 1020
Qy 1025 AGGACAGGAATCTGCGCAGGATCACCCGGATGGTGCTGGTGGTCGTGGCTGTATTTATCG 1084
Db 1021 AGGACAGGAATCTGCGCAGGATCACCCGGATGGTGCTGGTGGTCGTGGCTGTATTTATCG 1080
Qy 1085 TCTGCTGGACCCCCATCCACATCTACGTCATCATCAAAGCGCTGATCACGATTCCAGAAA 1144
Db 1081 TCTGCTGGACCCCCATCCACATCTACGTCATCATCAAAGCGCTGATCACGATTCCAGAAA 1140
Qy 1145 CCACATTTCAGACCGTTTCCTGGCACTTCTGCATTGCTTTGGGTTACACGAACAGCTGCC 1204
Db 1141 CCACATTTCAGACCGTTTCCTGGCACTTCTGCATTGCTTTGGGTTACACGAACAGCTGCC 1200

```
Qy       1205 TGAATCCAGTTCTTTACGCCTTCCTGGATGAAAACTTCAAGCGATGCTTCAGAGAGTTCT 1264
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1201 TGAATCCAGTTCTTTACGCCTTCCTGGATGAAAACTTCAAGCGATGCTTCAGAGAGTTCT 1260

Qy       1265 GCATCCCAACCTCGTCCACGATCGAACAGCAAAACTCCACTCGAGTCCGTCAGAACACTA 1324
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1261 GCATCCCAACCTCGTCCACGATCGAACAGCAAAACTCCACTCGAGTCCGTCAGAACACTA 1320

Qy       1325 GGGAACATCCCTCCACGGCTAATACAGTGGATCGAACTAACCACCAGCTAGAAAATCTGG 1384
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1321 GGGAACATCCCTCCACGGCTAATACAGTGGATCGAACTAACCACCAGCTAGAAAATCTGG 1380

Qy       1385 AGGCAGAAACTGCTCCATTGCCCTAACTGGGTCTCACACCATCCAGACCCTCGCTAAGCT 1444
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1381 AGGCAGAAACTGCTCCATTGCCCTAACTGGGTCTCACACCATCCAGACCCTCGCTAAGCT 1440

Qy       1445 TAGAGGCCGCCATCTACGTGGAATCAGGTTGCTGTCAGGGTGTGTGGGAGGCTCTGGTTT 1504
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1441 TAGAGGCCGCCATCTACGTGGAATCAGGTTGCTGTCAGGGTGTGTGGGAGGCTCTGGTTT 1500

Qy       1505 CCTGAGAAACCATCTGATCCTGCATTCAAAGTCATTCCTCTCTGGCTACTTCACTCTGCA 1564
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1501 CCTGAGAAACCATCTGATCCTGCATTCAAAGTCATTCCTCTCTGGCTACTTCACTCTGCA 1560

Qy       1565 CATGAGAGATGCTCAGACTGATCAAG 1590
             |||||||||||||||||||||||||
Db       1561 CATGAGAGATGCTCAGACTGATCAAG 1586
```

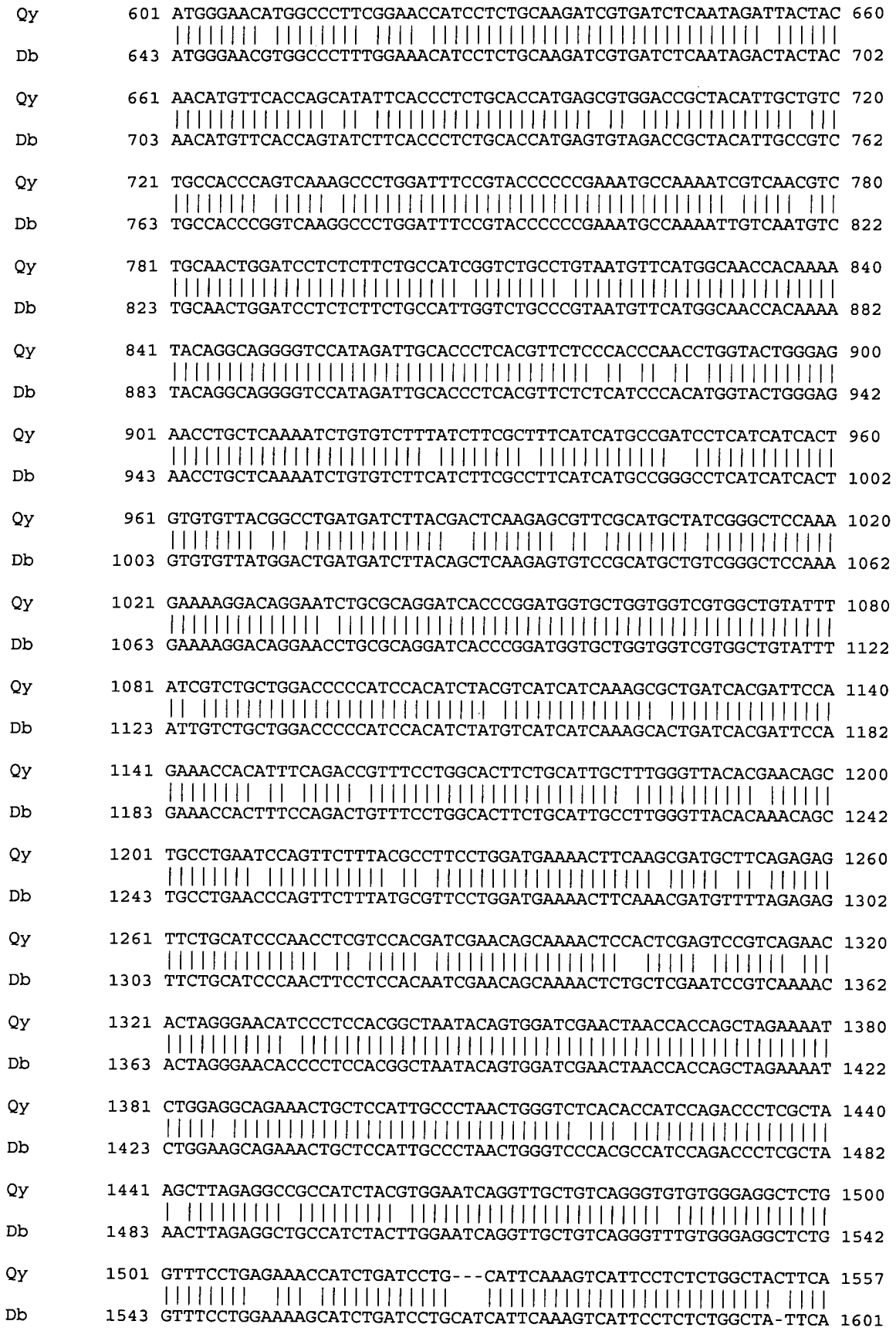
B

```
ID   AAD11041 standard; cDNA; 1981 BP.
XX
AC   AAD11041;
XX
DT   24-SEP-2001  (first entry)
XX
DE   Murine delta opioid receptor (DOR-2) partial cDNA.
XX
KW   Mouse; delta opioid receptor; DOR-2; analgesic; enkephalin;
KW   opioid addiction; anti-addictive; ss.
XX
OS   Mus sp.
XX
PN   US6265563-B1.
XX
PD   24-JUL-2001.
XX
PF   13-FEB-1995;   95US-0387707.
XX
PR   13-AUG-1992;   92US-0929200.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Evans CJ,  Keith DE,  Edwards RH,  Kaufman D;
XX
DR   WPI; 2001-463944/50.
XX
PT   Nucleic acids encoding mammalian kappa and mu opioid receptors, useful
PT   e.g. to identify substances for treating opioid addiction and/or useful
PT   as analgesics -
XX
PS   Claim 7; Fig 9; 46pp; English.
XX
```

CC The invention relates to recombinant nucleic acid molecules which encode
CC the murine delta opioid receptor, as well as recombinant nucleic acid
CC molecules which can be retrieved using low-stringency hybridisation to
CC this disclosed DNA. The invention provides genes encoding delta, kappa,
CC and mu receptors of any species containing genes encoding such receptors
CC sufficiently homologous to hybridise under low-stringency conditions.
CC The nucleic acids may be used to recombinantly express kappa and
CC mu opioid receptors in host cells. These cells may then be used in
CC assays to identify modulators of the receptors activity that may be
CC used, for example as analgesics or to combat the effects of opioid
CC addiction. The nucleic acids and their complements may also be used as
CC probe sequences to identify and characterise opioid receptor nucleic
CC acids. The present sequence is murine delta opioid receptor (DOR-2)
CC partial cDNA, mMOR-1.
XX
SQ Sequence 1981 BP; 499 A; 550 C; 436 G; 495 T; 1 other;

Query Match 85.7%; Score 1386.4; DB 22; Length 1981;
Best Local Similarity 92.2%; Pred. No. 0;
Matches 1494; Conservative 0; Mismatches 122; Indels 5; Gaps 3;

```
Qy          2 GTGGAAGGGGGCTACAAGCAGAGGAGAATATCAGACGCTCAGACGTTCCCTTCTGCCTGC 61
              |||| |||||| |||||||||||||||||||| |||||||||||||||| ||||||||||
Db         43 GTGGGAGGGGGATACAAGCAGAGGAGAATATCGGACGCTCAGACGTTCCATTCTGCCTGC 102

Qy         62 CGCTCTTCTCTGGTTCCACTAGGGCTGGTCCATGTAAGAATCTGACGGAGCCTAGGGCAG 121
              |||||||||||||||||||||||||| |||| |||||||| ||||||||||||||||||||
Db        103 CGCTCTTCTCTGGTTCCACTAGGGCTTGTCCTTGTAAGAAACTGACGGAGCCTAGGGCAG 162

Qy        122 CTGTGAGAGGAAGAGGCTGGGGCGCGTGGAACCCGAAAAGTC-TGAGTGCTCTCAGTTAC 180
              |||||||||||||||||||||||||| |||||||||| | || ||||||||||||||||
Db        163 CTGTGAGAGGAAGAGGCTGGGGCGCCTGGAACCCGAACACTCTTGAGTGCTCTCAGTTAC 222

Qy        181 AGCCTACCTAGTCCGCAGCAGGCCTTCAGCACCATGGACAGCAGCACCGGCCCAGGGAAC 240
              || ||||| |||||||| | || ||||| |||||||||||||| ||||||||||||||
Db        223 AGNCTACCGAGTCCGCAGGAAGCATTCAGAACCATGGACAGCAGCGCCGGCCCAGGGAAC 282

Qy        241 ACCAGCGACTGCTCAGACCCCTTAGCTCAGGCAAGTTGCTCCCCAGCACCTGGCTCCTGG 300
              | |||||||||||| |||||||||||||  ||||||||||||||||||||||||||||||
Db        283 ATCAGCGACTGCTCTGACCCCTTAGCTCCTGCAAGTTGCTCCCCAGCACCTGGCTCCTGG 342

Qy        301 CTCAACTTGTCCCACGTTGATGGCAACCAGTCCGATCCATGCGGTCTGAACCGCACCGGG 360
              |||||||||||||||||||||||| |||||||||| |||||||||  ||||  || ||
Db        343 CTCAACTTGTCCCACGTTGATGGAAACCAGTCCGACCCATGCGGTCCTAACCCGACGGGC 402

Qy        361 CTTGGCGGGAACGACAGCCTGTGCCCTCAGACCGGCAGCCCTTCCATGGTCACAGCCATT 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        403 CTTGGCGGGAACGACAGCCTGTGCCCTCAGACCGGCAGCCCTTCCATGGTCACAGCCATC 462

Qy        421 ACCATCATGGCCCTCTACTCTATCGTGTGTGTAGTGGGCCTCTTCGGAAACTTCCTGGTC 480
              |||||||||||||||| |||||||||||||||||||||||| ||||||||||||||||
Db        463 ACCATCATGGCCCTCTATTCTATCGTGTGTGTAGTGGGCCTCTTTGGAAACTTCCTGGTC 522

Qy        481 ATGTATGTGATTGTAAGATACACCAAAATGAAGACTGCCACCAACATCTACATTTTCAAC 540
              |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        523 ATGTATGTGATTGTAAGATATACCAAAATGAAGACTGCCACCAACATCTACATTTTCAAC 582

Qy        541 CTTGCTCTGGCAGACGCCTTAGCGACCAGTACACTGCCCTTTCAGAGTGTCAACTACCTG 600
              |||||||||||||| |||||||| || || || |||||||||||||||| |||||||||
Db        583 CTTGCTCTGGCAGATGCCTTAGCCACTAGCACGCTGCCCTTTCAGAGTGTTAACTACCTG 642
```



```
Qy       1558 CTCTGCACATGAGAGATGCTCAGACTGATCAAGACCAGAAGAAAGAAGAGACTACCGGAC 1617
              | || ||| | |||||  |||||||||     |  |     |||| |||||||||  | || |
Db       1602 CGCTACACGTCAGAGACACTCAGACTGTGTCAAGCACTCAGAAGGAAGAGACTGCAGGCC 1661

Qy       1618 A 1618
              |
Db       1662 A 1662
```

SEQ ID NO:2

C

R;Chen, Y.; Mestek, A.; Liu, J.; Hurley, J.A.; Yu, L.
Mol. Pharmacol. 44, 8-12, 1993
A;Title: Molecular cloning and functional expression of a mu-opioid receptor from rat brain.
A;Reference number: I57951; MUID:93341493; PMID:8393525
A;Accession: I57951
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-398 <RE2>

Query Match 100.0%; Score 2111; DB 2; Length 398;
Best Local Similarity 100.0%; Pred. No. 3.5e-170;
Matches 398; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDSSTGPGNTSDCSDPLAQASCSPAPGSWLNLSHVDGNQSDPCGLNRTGLGGNDSLCPQT 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDSSTGPGNTSDCSDPLAQASCSPAPGSWLNLSHVDGNQSDPCGLNRTGLGGNDSLCPQT 60

Qy         61 GSPSMVTAITIMALYSIVCVVGLFGNFLVMYVIVRYTKMKTATNIYIFNLALADALATST 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 GSPSMVTAITIMALYSIVCVVGLFGNFLVMYVIVRYTKMKTATNIYIFNLALADALATST 120

Qy        121 LPFQSVNYLMGTWPFGTILCKIVISIDYYNMFTSIFTLCTMSVDRYIAVCHPVKALDFRT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 LPFQSVNYLMGTWPFGTILCKIVISIDYYNMFTSIFTLCTMSVDRYIAVCHPVKALDFRT 180

Qy        181 PRNAKIVNVCNWILSSAIGLPVMFMATTKYRQGSIDCTLTFSHPTWYWENLLKICVFIFA 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 PRNAKIVNVCNWILSSAIGLPVMFMATTKYRQGSIDCTLTFSHPTWYWENLLKICVFIFA 240

Qy        241 FIMPILIITVCYGLMILRLKSVRMLSGSKEKDRNLRRITRMVLVVVAVFIVCWTPIHIYV 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 FIMPILIITVCYGLMILRLKSVRMLSGSKEKDRNLRRITRMVLVVVAVFIVCWTPIHIYV 300

Qy        301 IIKALITIPETTFQTVSWHFCIALGYTNSCLNPVLYAFLDENFKRCFREFCIPTSSTIEQ 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 IIKALITIPETTFQTVSWHFCIALGYTNSCLNPVLYAFLDENFKRCFREFCIPTSSTIEQ 360

Qy        361 QNSTRVRQNTREHPSTANTVDRTNHQLENLEAETAPLP 398
              |||||||||||||||||||||||||||||||||||||
Db        361 QNSTRVRQNTREHPSTANTVDRTNHQLENLEAETAPLP 398
```